15 July 1966

STAFF STUDY -- FOR PHASE II, INFORMATION FLOW ANALYSIS

1. PROBLEM.

To improve the NPIC information processing system to better service current and predicted future increased requirements in the field of Photographic Exploitation.

2. FACTS BEARING ON THE PROBLEM.

a. An information processing system, in the context of NPIC, can be defined as a network of related subsystems developed according to an integrated scheme for performing storage, retrieval, and manipulation, of textual graphic, and image information.

b. The system presently in use started in 1953 before the establishment of NPIC; the information processing system used by the predecessor to NPIC grew in size and content to the point where the first computer, the IBM 1401, was installed in NPIC in 1961, and has evolved to its current magnitude without the benefit of a detailed analysis.

c. The increasing frequency of photographic inputs and the resultant acceleration of the exploitation process has made it difficult, if not impossible, to maintain current substantive data files with the existing file structures and maintenance routines.

d. The lack of flexibility of the files in the ability to respond to a variety of requests has resulted in a number of redundant files structured to meet specific requests.

e. A comprehensive file restructuring coupled with an on-line updating and retrieval capability is indicated if the relevancy and timeliness of pertinent information is to be improved and maintained.

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f. Phase I of the program is presently under contract with the [redacted] Phase II is the continuation of the effort.

3. DISCUSSIONS.

a. Current Procedures. As a first step in providing more timely and up-to-date information processing, the present NPIC computers, an IBM 1401 and a Univac 490, are being replaced by two Univac 494 computers within the next year and a half. To obtain an efficient utilization of the new computers, it is also necessary to restructure the existing data base and revamp the present programs. As an example,

the Target Brief File, initially implemented for use by the P.I. analyst in immediate scans of photographic inputs, has increased in size until currently more than 16,000 targets are retained in the file. Although provisions were made for recalling lists of targets by country, WAC coordinates, NPIC target number, and BE number, no inherent means were provided to retrieve information by category, mission number, or date. As a result, separate redundant files were created to obtain access to information already in the Target Brief file. A printout of the complete file takes approximately 30 hours of computer time; much of which may be wasted because only a portion of the information is required.

b. Origin of Concept. Both the IG Survey of NPIC in June 1965, and the Land Panel Report of August 1965, recognized that the computer system within NPIC was rapidly becoming saturated and recommended that steps be taken to improve the information processing procedure so that the anticipated increased demands for computer time could be satisfied. As a result of these recommendations, proposals were solicited for an Information Processing System Program encompassing the following four major phases:

1. Analysis and projection of System Requirements (Phase I)
2. System Design (Phase II)
3. System Engineering Procurement
4. System Installation and Test

A contract for Phase I, The Analysis & Projection of System Requirements, was let in March of 1966 and is scheduled for completion in August 1966.

c. Proposed Project. This follow-on effort covers the System Design, Phase II. During this phase the following will be performed: (1) alternative methods for performing the system functions, based on the Conceptual Design generated under Phase I, will be developed and evaluated, (2) the detailed system configuration and overall operation will be established, (3) detailed specifications for system components, both hardware and software, will be prepared; and (4) a detailed system implementation plan will be submitted. Reports from the contractor covering monthly progress and the areas of work mentioned above will also be required.

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d. Selection of Contractor. The contractor selected for the performance of Phase II is [redacted] has performed well in the execution of Phase I and is well qualified to perform the additional work described herein. Since the performance of Phase II is dependent on the knowledge gained through the analysis and investigation of NPIC requirements and processes under Phase I, it is illogical to consider alternate contractors for the Phase II work. All work will be performed either at [redacted] or within the physical confines of NPIC.

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e. Program Phasing. The total program phasing is shown in Tab C. The proposed period of performance for Phase II, shown in Tab B, will

cover an eight and one-half month effort. The first six and one-half months will be devoted to developing and evaluating alternate systems and proposing a description of the chosen system. A report covering these areas of work will be issued at that time. The remaining two months will be spent preparing detailed specifications for the system components and preparing the implementation plans. Reports covering these tasks will then be issued. As the need for long-lead-time components is discovered, efforts will be made to promulgate the appropriate detailed specifications so that procurement can be initiated in advance of the issuance of the final reports.

f. Coordination. Coordination within the Agency (OCS and ORD) was accomplished prior to the initiation of the Phase I contract and has been continuing throughout Phase I. Coordination will continue through Phase II.

g. Alternatives. Phase II outlined herein is cohesive in nature and does not readily lend itself to a disjointing of sub-tasks. Failure to perform any of the proposed tasks will essentially negate the entire phase.

Although it would be possible to perform the tasks sequentially instead of concurrently (thus extending the program into FY-1968 and calling for split funding), any financial advantage gained would be offset by the resultant delay in achieving the intended goals.

The whole of Phase II could be delayed until FY-1968. This course of action would also delay the intended goals and has the additional disadvantages of permitting a time-engendered dilution of the basic knowledge gained in Phase I, and the loss of contractor personnel familiar with NPIC functions and processes.

The least desirable alternate would be the cessation of all work beyond Phase I. This choice would solve none of the NPIC information processing problems and would mean that the funds expended on the initial phase would have been wasted.

4. CONCLUSIONS.

a. The present NPIC computerized processing system is incapable of adequately meeting the current and anticipated needs for pertinent information in a timely and relevant fashion.

b. Phase I, an analysis of the information flow process and the conceptual design of an improved system, is currently under contract with [redacted]

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c. Prior to the implementation of an improved system, alternate configuration of systems fulfilling the conceptual requirement must be developed and evaluated, specifications for the system components must be generated, and an implementation plan must be devised.

25X1A 5. RECOMMENDATIONS.

It is recommended that a contract for Phase II be negotiated with [redacted] encompassing the scope of work delineated in the attached proposal at
25X1A a cost of [redacted]

6. REFERENCES AND ATTACHMENTS.

TAB A. Catalog Form

TAB B. Program Phasing, Phase II

TAB C. Total Program Phasing

Attachment: [redacted] 25X1A

SECRET

(When Filled In)

R & D CATALOG FORM — 23 June 1966

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1. PROJECT TITLE/CODE NAME
Information Flow Analysis

2. SHORT PROJECT DESCRIPTION
Phase II of analysis of NPIC substantive Data Base--System design based on the Analysis performed under Phase I. (Follow-On)

3. [redacted]

4. LOCATION OF CONTRACTOR [redacted]

5. CLASS OF CONTRACTOR

6. TYPE OF CONTRACT

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7. FUNDS
FY 1966 $ [redacted]
FY 1967
FY 1968 $

8. REQUISITION NO.

9. BUDGET PROJECT NO.
NP-H-1- 08016

10. EFFECTIVE CONTRACT DATE *(Begin - end)*

11. SECURITY CLASS.
A.A. - Secret
T. - Unclassified
W. - Top Secret

12. RESPONSIBLE DIRECTORATE/OFFICE/PROJECT OFFICER TELEPHONE EXTENSION

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DDI/NPIC/P&DS/ [redacted]

13. REQUIREMENT/AUTHORITY
This project was originally initiated by NPIC/IPD to improve information processing as recommended by IG Survey in June 1965 and Land Panel Report of August 1965.

14. TYPE OF WORK TO BE DONE
Applied Research. Develop alternate methods for performing system functions, evaluate alternates through Analysis & Simulation, establish detailed system configuration, specifications for system components, and system implementation plan.

15. CATEGORIES OF EFFORT

MAJOR CATEGORY	SUB-CATEGORIES
Information Handling	Automatic Processing Data Handling Data Management Information Processing

16. END ITEM OR SERVICES FROM THIS CONTRACT/IMPROVEMENT OVER CURRENT SYSTEM, EQUIPMENT, ETC.
Reports Covering:
1. Alternate methods for performing system functions, 2. Evaluation of alternates, 3. Detailed specifications for system components, and 4. Detailed system implementation plan.

17. SUPPORTING OR RELATED CONTRACTS *(Agency & Other)*/COORDINATION
Coodination was accomplished with OCS and ORD prior to the initiation of the Phase I contract and will continue throughout Phase II.

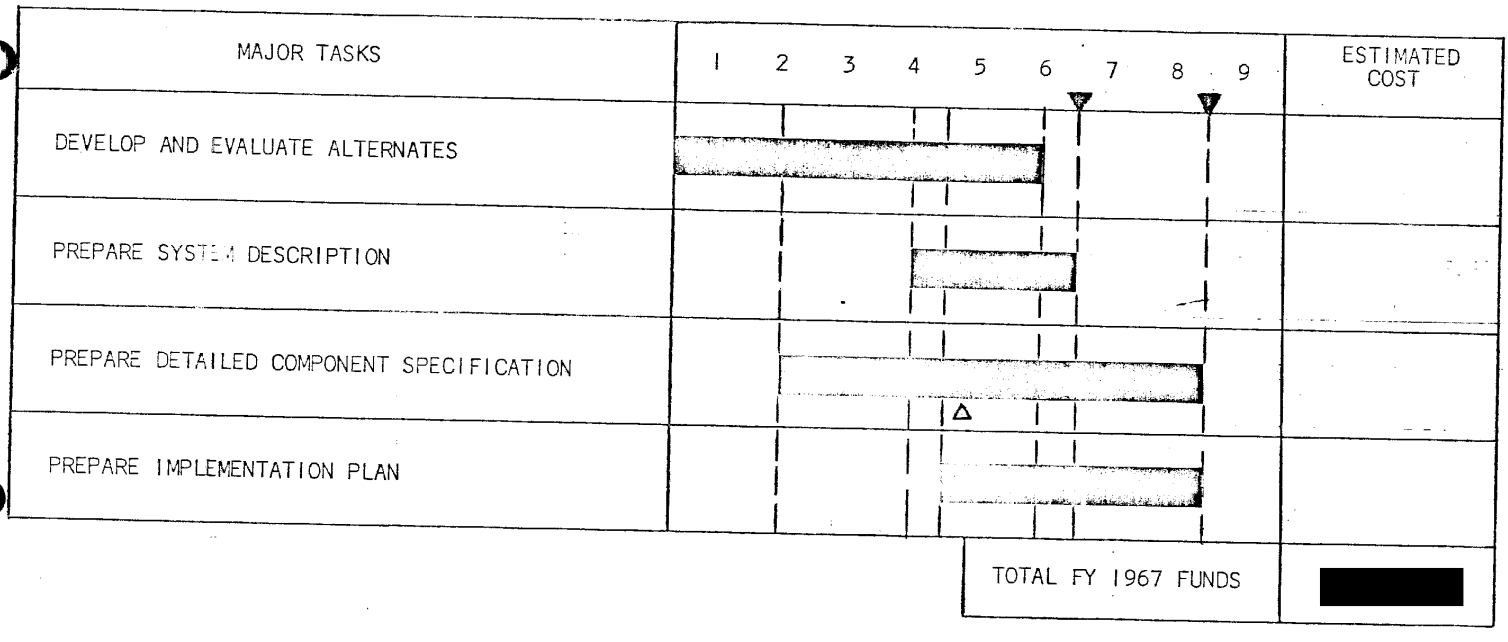
18. DESCRIPTION OF INTELLIGENCE REQUIREMENT AND DETAILED TECHNICAL DESCRIPTION OF PROJECT *(Continue on additional page if required)*
This work is the second phase of a four-phase program to implement an integrated information processing system for NPIC. Based on the Phase I work, the required system and system components will be analyzed and evaluated and the system implementation will be planned.

19. APPROVED BY AND DATE

OFFICE	DEPUTY DIRECTOR	DDCI

TAB B
6 July 1966

INFORMATION FLOW ANALYSIS
PROGRAM PHASING - PHASE II



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▼ REPORTS

△ LONG LEAD TIME ITEM SPECIFICATIONS